PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GRM:AL:FP20886	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/AU2004/001727	International filing date *(day/month/year)* 9 December 2004	Priority date *(day/month/year)* 9 December 2003

International Patent Classification (IPC) or national classification and IPC

Int. Cl. ***B65D 30/08*** (2006.01) ***B65B 7/02*** (2006.01) ***B65D 33/18*** (2006.01)
B31B 1/62 (2006.01) ***B65D 30/14*** (2006.01)

Applicant

AMCOR LIMITED et al

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. [X] *(sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:
      - [X] sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      - [ ] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. [ ] *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

[X]	Box No. I	Basis of the report
[ ]	Box No. II	Priority
[ ]	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
[X]	Box No. IV	Lack of unity of invention
[X]	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
[ ]	Box No. VI	Certain documents cited
[ ]	Box No. VII	Certain defects in the international application
[X]	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
24 June 2005	22 March 2006
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer ADRIANO GIACOBETTI Telephone No. (02) 6283 2579

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2004/001727

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

[X] The international application in the language in which it was filed

[ ] A translation of the international application into , which is the language of a translation furnished for the purposes of:

[ ] international search (under Rules 12.3(a) and 23.1 (b))

[ ] publication of the international application (under Rule 12.4(a))

[ ] international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

[ ] the international application as originally filed/furnished

[X] the description:

pages **1-16** as originally filed/furnished
pages* received by this Authority on with the letter of
pages* received by this Authority on with the letter of

[X] the claims:

pages as originally filed/furnished
pages* as amended (together with any statement) under Article 19
pages* **17-20** received by this Authority on **11 October 2005** with the letter of **11 October 2005**
pages* received by this Authority on with the letter of

[X] the drawings:

pages **1/5-5/5** as originally filed/furnished
pages* received by this Authority on with the letter of
pages* received by this Authority on with the letter of

[ ] a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. [ ] The amendments have resulted in the cancellation of:

[ ] the description, pages
[ ] the claims, Nos.
[ ] the drawings, sheets/figs
[ ] the sequence listing *(specify)*:
[ ] any table(s) related to the sequence listing *(specify)*:

4. [ ] This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

[ ] the description, pages
[ ] the claims, Nos.
[ ] the drawings, sheets/figs
[ ] the sequence listing *(specify)*:
[ ] any table(s) related to the sequence listing *(specify)*:

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:

   ☐ restricted the claims

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☐ neither restricted the claims nor paid additional fees

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:

   ☐ complied with.

   ☒ not complied with for the following reasons:

   1. Claims 1 to 5 are directed to an as-manufactured multi-wall sack. The sack comprises a polymeric inner pouch and a paper-based outer bag. The sack has a top end that (a) is open in the as-manufactured form of the sack so that the sack can be filled with product via the open end and (b) is formed so that it can be closed to form a top block end. The sack comprises pressure adhesive that connects together the inner pouch and the outer bag at the open end of the sack. It is considered that the features of the sack and in particular the use of pressure adhesive that connects together the inner pouch and the outer bag at the top end of the sack comprise a first "special technical feature".

   2. Claim 6 is also directed to an as-manufactured multi-wall sack. The sack comprises a polymeric inner pouch and a paper-based outer bag. The sack has a top end that (a) is open in the as-manufactured form of the sack so that the sack can be filled with product via the open end and (b) is formed so that it can be closed to form a top block end. The sack comprises heat-activated adhesive on sections of the outer bag that adhere to other sections of the outer bag as part of the sequence of steps to close the outer bag. It is considered that the features of the sack and in particular the use of heat-activated adhesive on sections of the outer bag that adhere to other sections of the outer bag comprise a second "special technical feature".

      Claims 7 to 14 are appended to either independent claim 1 or independent claim 6 and hence can be characterised by the first or second special technical features outlined above.

   These groups are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is a sack that comprises a polymeric inner pouch and a paper-based outer bag. The sack has a top end that (a) is open in the as-manufactured form of the sack so that the sack can be filled with product via the open end and (b) is formed so that it can be closed to form a top block end. However this concept is not novel in the light of the prior art documents cited in this report such as AU 46945/97 (729303) B2 (AMCOR PACKAGING (AUSTRALIA) PTY LTD) which discloses a sack with a closed block top end. Therefore these claims lack unity a posteriori.

4. Consequently, this report has been established in respect of the following parts of the international application:

   ☒ all parts.

   ☐ the parts relating to claims Nos.

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims 1-14	YES
	Claims	NO
Inventive step (IS)	Claims 2, 4, 7, 14	YES
	Claims 1, 3, 5, 6, 8-13	NO
Industrial applicability (IA)	Claims 1-14	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

Cited Prior Art Documents
D1: AU 46945/97 (729303) B2 (AMCOR PACKAGING (AUSTRALIA) PTY LTD)
D2: US 5007233 A (BOSE)
D3: US 6213644 B1 (HENDERSON et al.)
D4: EP 869073 B1 (FRANPACK BATES B.V.)
D5: AU 10118/99 (760523) B2 (AMCOR PACKAGING (AUSTRALIA) PTY LTD)
D6: WO 2001/025102 A1 (INTERNATIONAL PAPER COMPANY)
D7: US 4088264 A (VOGT)

NOVELTY(N): Claims 1-14 (YES)

None of the individual documents above disclose or fairly teach all of the features of the invention in claim 1 or claim 6. Therefore these inventions of these claims, and the appended claims, are considered to be novel.

INVENTIVE STEP(IS): Claim 1, 3, 5, 6, 8-13 (NO)

Documents (D1) to (D7) each disclose a multi-wall sack or bag that comprises an inner "pouch" made from a polymeric material and an outer bag made from a paper-based material. Documents (D1), (D3), (D4) disclose sacks with block top ends, while documents (D2), (D5) to (D7) disclose sacks that are capable of having a block top ends given the nature and structure of these sacks. Some of these sacks have block bottom ends which provides support to the ability of forming block top ends.

Claims 1, 9:

The sack of claim 1 is characterised by the feature of pressure adhesive being used to connect together the inner pouch and the outer bag at an open top end of the sack. Documents (D1) to (D4) disclose the inner pouch being adhered, glued, bonded or tacked to the outer bag by an adhesive. The particular choice of adhesive being a pressure-sensitive adhesive does not involve an inventive ingenuity. The properties of pressure-sensitive adhesive are well known in the art and make it suitable to connect together these components of the sack. Please note that the limiting features of claim 2, and the observation comments in Box VIII, are not defined in claim 1. Hence the invention as defined in claims 1 and 9 does not involve an inventive step over the documents (D1) to (D4).

(Continued on Supplemental Sheet)

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Independent claims 1 and 6 do not fully define the invention described. The specification discloses an improvement over the applicant's previous Australian patent numbers 729303 and 760523.

   It would seem that the amount and/or type of adhesive selected for the adhesion of the inner pouch to the outer bag is greater on one of a front or a rear side of the bag than on the opposite side of the bag as part of the sequence of steps to close the outer bag after the step of heat sealing the inner pouch closed. This difference in adhesion allows one side of the sealed inner pouch to be detached from the outer bag when the front and rear sides of the outer bag are folded outwardly, and the sealed inner pouch positioned on one side makes it possible for the other side to be a contact surface for adhering the outer bag in a closed position using heat activated adhesive without having to be concerned about the impact of heat required to activate the adhesive on the polymeric material of the inner pouch. Hence these claims do not fully define the features of the invention described in this specification.

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of Box V:

INVENTIVE STEP(IS): Claims 1, 3, 5, 6, 8-13 (NO) Continued

Claims 3, 5, 8:

These claims include the features of a heat-activated adhesive and an "easy" open feature on the outer bag. The heat-activated adhesive can be a hot-melt adhesive. Document (D5) discloses the outer bag having an upstanding flap (21) with a line of melt adhesive (ie heat-activated adhesive) which adheres to an outer face of an upper section (22b) of a cover sheet (22) which has an easy open tear strip (24). Thus, when the disclose of document (D5) is combined with one or more of the documents (D1) to (D4), the features of claims 3, 5 and 8 are disclosed. Hence the invention of claims 3, 5 and 8 does not involve an inventive step.

Claims 10-13:

The added features of the inner pouch of the sack having vent means or having product identification coding applied are mere workshop improvements over the sacks disclosed in above documents. They are arrangements which any competent worker in the art would have been expected to make and would be well within the general knowledge of any such appropriately skilled person. Therefore the invention of these claims 10 to 13 lacks an inventive step.

Independent Claim 6:

The invention of claim 6 is characterised by the sack comprising a heat-activated adhesive on sections of the outer bag. Documents (D2), (D6) and (D7) each disclose the outer bag having an upstanding flap with a heat-activated or hot-melt adhesive (ie item (20) in document (D1), page 8, line 6 to 10 in document (D6), and item "S" in document (D7)). As noted earlier these sacks being formed with a block end top is not considered to involve any inventive ingenuity. Therefore the invention defined in claim 6 does not involve an inventive step over the above prior art documents.

INVENTIVE STEP(IS): Claims 2, 4, 7, 14 (YES)

The features added by claims 2 and 4 to the sack of claim 1, or claim 7 to the sack of claim 6, and the apparatus defined in claim 14 (when used with the sack defined in claims 1 to 6) are considered to involve an inventive step over the above documents.

INDUSTRIAL APPLICABILITY(IA): Claims 1-14 (YES)

The invention as defined in claims 1 to 14 meet the requirements of industrial applicability because the sack and apparatus to make the sack, can be made or used in industry.

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CLAIMS

1. An as-manufactured multi-wall sack that comprises an inner pouch, typically made from a polymeric material, and an outer bag, typically made from a paper-based material, with the sack having a top end that (a) is open in the as-manufactured form of the sack so that the sack can be filled with product via the open end and (b) is formed so that it can be closed to form a top block end, and wherein, in the as-manufactured form of the sack, the sack comprises pressure adhesive that connects together the inner pouch and the outer bag at the open top end of the sack.

2. The sack defined in claim 1 wherein the amount and/or the type of adhesive is selected so that the adhesion of the inner pouch to the outer bag is greater on one of a front or a rear side of the sack than on the opposite side of the sack so that, as part of a sequence of steps to close the outer bag after a step of heat sealing the inner pouch closed, the front and rear sides of the outer bag can be folded outwardly with the sealed inner pouch being selectively detached from one of the sides of the outer bag and being retained by the other side.

3. The sack defined in claim 1 or claim 2 wherein, in the as-manufactured form of the sack, the sack comprises heat-activated adhesive on sections of the outer bag that adhere to other sections of the outer bag as part of the sequence of steps to close the outer bag.

4. The sack defined in claim 3 wherein, in the as-manufactured form of the sack, the positions of the sections of the outer bag that carry heat-activated adhesive are selected so that the sequence of steps to close the outer bag where possible positions the heat-

activated adhesive sections so that the sections do not overlie the inner pouch.

5. The sack defined in any one of the preceding claims comprises an "easy" open feature on the outer bag that facilitates opening the outer bag after it has been closed.

6. An as-manufactured multi-wall sack that comprises an inner pouch, typically made from a polymeric material, and an outer bag, typically made from a paper-based material, with the sack having a top end that (a) is open in the as-manufactured form of the sack so that the sack can be filled with product via the open end and (b) is formed so that it can be closed to form a top block end, and wherein, in the as-manufactured form of the sack, the sack comprises heat-activated adhesive on sections of the outer bag that adhere to other sections of the outer bag as part of the sequence of steps to close the outer bag.

7. The sack defined in claim 6 wherein, in the as-manufactured form of the sack, the positions of the sections of the outer bag that carry heat-activated adhesive are selected so that the sequence of steps to close the outer bag where possible positions the heat-activated adhesive sections so that the sections do not overlie the inner pouch.

8. The sack defined in claim 6 or claim 7 comprises an "easy" open feature on the outer bag that facilitates opening the outer bag after it has been closed.

9. A filled and sealed bulk packaging sack formed by filling and closing the as-manufactured multi-wall sack defined in any one of the preceding claims.

10. The bulk packaging sack defined in claim 9

further comprises a vent seal to allow air to escape from the inner pouch after the inner pouch has been closed.

11. The bulk packaging sack defined in claim 9 or claim 10 wherein the vent seal defines a tortuous flow path for air to escape from the closed inner pouch.

12. The bulk packaging sack defined in any one of claims 9 to 11 further comprises product identification coding applied to the inner pouch after filling the as-manufactured multi-wall sack with product and prior to closing the outer bag.

13. The bulk packaging sack defined in any one of claims 9 to 12 further comprises product identification coding on the outer bag.

14. An apparatus for forming a top block end on the as-manufactured multi-wall sack defined in any one of claims 1 to 8 after the sack has been filled with product, which apparatus comprises:

(a) a means for supporting opposed front and rear sides of a filled sack having an open top end as the sack is moved between and operated on at the following stations (b) to (e);

(b) a first sealing station for bringing opposed sides of the open top end of the inner pouch into contact and heat sealing the opposed sides together and thereby closing the inner pouch;

(c) a first folding station for folding the opposed sides of the outer bag outwardly and forming out-turned sides and in-turned triangular wings, with the heat sealed inner pouch being retained by pressure adhesive to one side of the outer bag;

(d) a second sealing station for activating heat-activated adhesive along a section of an inner surface of one of the out-turned sides of the outer bag and thereafter folding the out-turned sides of the outer bag inwardly so that the adhesive-carrying inner side of the outer bag overlies and contacts an outer surface of the other side and the activated heat-sensitive adhesive adheres the folded sides together, with the inward folding of the out-turned sides causing sections of each in-turned wing to fold inwardly to overlie other sections of the wings; and

(e) a third sealing station for activating heat-sensitive adhesive along sections of surfaces of the in-turned wings of the outer bag and thereafter adhering the overlying sections of the wings together to complete the sequence of steps to close the open top end of the sack.